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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,053	06/14/2006	Ruijia Li	42P22187	8819

45209 7590 03/15/2011

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EXAMINER	
KIM, HEE-YONG	
ART UNIT	**PAPER NUMBER**
2482	
MAIL DATE	**DELIVERY MODE**
03/15/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,053	LI ET AL.	
	Examiner	Art Unit	
	HEE-YONG KIM	2482	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,9-14 and 16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,9-14 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in reply to Applicant's Response (RCE) dated January 18, 2011.

2. **Claims 1, 3, 4-5, 9, 10-11 and 14** have been amended.

3. **Claims 2, 7-8, 15 and 19-20** have been cancelled.

4. **Claims 1, 3-6, 9-14 and 16-18** are pending.

Response to Arguments

5. Rejection of **Claims 14-20** under 35 U.S.C. 101 is withdrawn because amendment overcomes the previous rejection. However, claims are objected because of unclearness.

6. Applicant's arguments with respect to the prior art rejection over **claims 1, 3-6, 9-14 and 16-18** have been considered but they are not persuasive.

7. Regarding independent **claims 1 and 14**, applicant argues (pp. 6-7) that the claimed invention is different from the prior art (Vetro) because Vetro's bit rate adjustment is objet based instead of being based on different area of a frame. Examiner respectfully disagrees. Each object occupies different area of a frame and therefore Vetro addresses different area of the frame. Even the applicant discloses using interchangeably object or area based characterization of frame areas (paragraph 13 and 14, and Fig.2).

8. Regarding **claim 9**, the applicant's argument (pp. 6-7) is fully considered but it is moot because the amendment necessitates the ground of rejection.

Claim Objections

9. **Claims 14 and 16-18** are objected to because of the following informalities. **Claim 14** recites "A computer-readable storage medium having instructions therein, as opposed to a transitory electromagnetic signal…". However, it is not clear what it means. It is recommended to use "A non-transitory computer-readable storage medium" instead. **Claims 16-18** recite "machine-readable medium" which is not consistent with "a computer-readable storage medium" in claim 14.

10. **Claim 16** is objected because it is dependent on the cancelled claim 15.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. **Claims 1, 3-4, 14 and 16** are rejected as being unpatentable over Kuhn (US 2002/0,157,112) in view of Vetro (US 6,490,320).

Regarding **claim 1**, Kuhn discloses Method and Apparatus for Generating Compact Transcoding Hints Metadata. Kuhn specifically discloses A method (Fig.1) Transcoding System) comprising: defining (Description of Region of Interest , Fig.13) a

first part of a frame (Region of Interest, paragraph 84 and 85) as containing sensitive information (Region or Object or of Interest, paragraph 85), wherein the frame includes the first part (Region of Interest, paragraph 84 and 85) and a second part (Not Region of Interest), the first part being identified as an area of the frame (Region of Interest, paragraph 84 and 85), the second part being identified as another area of the frame (Not Region of Interest);

transcoding (Audiovisual Transcoding 106, Fig.1) the first part of the frame at a higher bit rate than the second part of the frame (higher bit rate for the region of interest, paragraph 85) based on bandwidth available for transmitting the transcoded frame (different bitrate for different bandwidth, paragraph 2).

However Kuhn fails to disclose such that the transcoding further includes:

detecting first network congestion;

in response to the detecting of the first network congestion,

reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame; detecting second network congestion;

in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced.

In the analogous field of endeavor, Vetro discloses Adaptable Bitstream Video Delivery System. Vetro specifically discloses detecting a first and second network congestions (report network congestion and available bit rate, col.8, line 9-10), and reducing frame rate (equivalent to *reducing bit rate*) for the background *(the second*

part, low priority) while keeping the information (*bit rate*) about the foreground (*first part, high priority*) intact (col.11, line 40-43), in order to convert compressed input bitstream to output bitstream at an available bit rate (col.5, line 60-64).

Therefore, given this teaching, it would have been obvious to modify Kuhn by providing wherein transcoding further comprises: reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, in order to convert compressed input bitstream to a output bitstream at an available bit rate. However Kuhn and Vetro still fails to disclose *in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced*.

However, it was obvious that in the case of severe network condition, reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces is not enough for matching available bandwidth. Therefore, the bit rate of the first part should be reduced in addition to reducing the bit rate of the second part such that *second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced* to allocate more bits to the priority region, in order to adjust bit rate according to further reduced bandwidth due to the second network congestion.

Therefore, given this teaching, it would have been obvious to modify Kuhn and Vetro by specifically providing in response to the detecting of the second network congestion, reducing the bit rates of the first and second parts of the frame wherein the

bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, in order to adjust bit rate according to further reduced bandwidth due to the second network congestion. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, discloses all the features of claim 1.

Regarding **claim 3**, Kuhn and Vetro disclose everything claimed as applied above (see claim 1). In addition, Kuhn discloses further comprising:
storing a coordinate of each of the items in a file (Motion trajectory_D may be used to spatially describe, paragraph 85).

Regarding **claim 4**, Kuhn and Vetro disclose everything claimed as applied above (see claim 1). However, Kuhn and Vetro fail to disclose wherein the Transcoding further comprises: *detecting of the third network congestion; in response to the detecting of the third network congestion, discarding a low priority area of the second portion.*

However, it was obvious that in the case of more severe network condition by the indication of the third network congestion, even reducing the bit rates of the first and second parts of the frame is not enough for matching available bandwidth. Therefore dropping all the bits of second part is required, in order to adjust bit rate according to

further reduced bandwidth due to the third network congestion (severe enough to drop the all second part).

Therefore, given this teaching, it would have been obvious to modify Kuhn and Vetro by specifically providing detecting the third network congestion (severe enough to drop all the second part) and upon it dropping all the second part, in order to adjust bit rate according to further reduced bandwidth due to the third network congestion. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, further incorporating detecting the third network congestion (severe enough to drop all the second part) and upon it dropping all the second part, discloses all the features of claim 4.

Regarding **claim 14**, the invention is a computer-readable medium claim corresponding to the method claim 1. Therefore, it is rejected for the same reason as claim 1.

Regarding **claim 16**, the invention is a computer-readable medium claim corresponding to the method claim 4. Therefore, it is rejected for the same reason as claim 4.

13. **Claims 5-6, 8-13, and 17-18** are rejected as being unpatentable over Kuhn in view of Vetro, and further in view of Augenbraum (US 5,493,456) (hereafter referenced as Augenbraum).

Regarding **claim 5**, Kuhn and Vetro discloses everything claimed as applied above (see claim 1). However Kuhn and Vetro fail to disclose wherein the second part of the frame is determined by: frequency of the appearance or location relative to central location.

In the analogous field of endeavor, Augenbraum discloses Method and Apparatus for Increasing the Recoding Time of a Digital Video Tape Recorder. Augenbraum specifically discloses data reduction by quantizing with different scale factors based on priority of the video data (object) being central portion of the picture, in order to generate the reduced bit rate stream needed to support long play mode of digital VTR (col.3, line 65-68).

Therefore, given this teaching, it would have been obvious to one skilled in the art to modify Kuhn and Vetro by providing wherein the second part of the frame is determined by location far relative to central location, in order to generate the reduced bit rate stream for the second part. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more

than the bit rate of the first part of the frame is reduced, incorporating the Augenbraum data reduction based on the priority of video data being central part of the picture, has all the features of claim 5.

Regarding **claim 6**, the Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced incorporating the Augenbraum data reduction based on the priority of video data being central part of the picture, as applied to claim 5, discloses wherein the first part contains more bits per macroblock than the second part (reduction by quantizing with different scale factors based on priority of the video data (object) being central portion of the picture, col.3, line 65-68).

Regarding **claim 9**, the method claim 1 discloses all the features of claim 9 except the first and second parts defined as different areas of the frame and not different objects of consecutive frames.

Augenbraum specifically discloses data reduction by quantizing with different scale factors based on priority of the video data (object) being central portion of the picture, in order to generate the reduced bit rate stream needed to support long play mode of digital VTR (col.3, line 65-68).

Therefore, given this teaching, it would have been obvious to one skilled in the art to modify Kuhn and Vetro by providing defining the first part as containing the

objects appearing in a most central location of the frame sequence and the remainder as the second portion, in order to generate the reduced bit rate stream to combat against network congestion. The Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, incorporating the Augenbraum defining the first part as containing the objects appearing in a most central location of the frame sequence and the remainder as the second portion, has all the features of claim 9.

Regarding **claim 10**, Kuhn and Vetro and Augenbraum disclose everything claimed as applied above (see claim 9). In addition, Kuhn discloses further comprising: memory (Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to store a configuration file (metadata, paragraph 17) including a coordinate (spatially describe, paragraph 85) of an item in the first part of the frame, wherein the item is one of an object and an area (Region or Object or of Interest, paragraph 85).

Regarding **claim 11**, the Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, incorporating the Augenbraum defining the

first part as containing the objects appearing in a most central location of the frame sequence and the remainder as the second portion, as applied to claim 9, discloses memory (Kuhn: Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to store a configuration file (Kuhn: metadata, paragraph 17) including a priority (Augenbraum: priority of the video data , col.3, line 65-68) of an item in the first part (central part, col.3, line 65-68) of the frame, wherein the item is one of an object and an area (Kuhn: Region or Object or of Interest, paragraph 85).

Regarding **claim 12**, Kuhn and Vetro and Augenbraum disclose everything claimed as applied (see claim 11),. Kuhn further discloses file analyzer (Kuhn: Transcoding Hints Generation Unit 104, Fig.1) to convert a format of the configuration file (Kuhn: Transcoding Hints DS 1001, Fug.10) into another format (Kuhn: Fig.16. transcoding hints state meta-data, including bit rate and quantizer scale), compatible with the transcoder.

Regarding **claim 13**, the Kuhn method, incorporating the Vetro reducing the bit rate of the second part of the frame while maintaining the bit rate of the first part of the frame if the available bandwidth reduces, further incorporating detecting of the second network congestion and upon it reducing the bit rates of the first and second parts of the frame wherein the bit rate of the second part of the frame is reduced more than the bit rate of the first part of the frame is reduced, incorporating the Augenbraum defining the first part as containing the objects appearing in a most central location of the frame sequence and the remainder as the second portion, as applied to claim 9, discloses wherein the sensitive-information generator (Kuhn: Transcoding Hints Generation Unit

104, Fig.1) sends the definition of the first frame (Kuhn: Audiovisual Transcoding Hints Metadata Buffer 105, Fig.1) to the transcoder and receives a status of the bandwidth (Vetro: report network congestion and available bit rate, col.8, line 9-10) from the transcoder.

Regarding **claim 17**, the invention is a computer-readable medium claim corresponding to the method claim 5. Therefore, it is rejected for the same reason as claim 5.

Regarding **claim 18**, the invention is a computer-readable medium claim corresponding to the method claim 6. Therefore, it is rejected for the same reason as claim 6.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday, 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/HEE-YONG KIM/
Examiner, Art Unit 2482

/Andy S. Rao/
Primary Examiner, Art Unit 2486
March 11, 2011